GA27-2750-2 File No. S360/S370/S3-09

**Systems** 

IBM 3270 Information
Display System
Problem Determination Guide



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Display System
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#### **Preface**

This guide presents charted problem identification procedures for operators of the IBM Information Display System. The operator's yes-or-no answers to the guide's logical questions will quickly trace an apparent problem to one of the following system units:

- IBM 3271 Control Unit, Models 1 and 2
- IBM 3272 Control Unit, Models 1 and 2
- IBM 3275 Display Station, Models 1 and 2
- IBM 3277 Display Station, Models 1 and 2
- IBM 3284 Printer, Models 1, 2, and 3
- IBM 3286 Printer, Models 1 and 2
- IBM 3288 Line Printer, Model 2

As certain controls and indicators are referenced, it is assumed that the user is familiar with, and has available a copy of, *Operator's Guide for IBM 3270 Information Display System*, GA27-2742.

#### Third Edition (November 1974)

This is a major revision of, and obsoletes, GA27-2750-1. Most significant is the inclusion of a section on the 3288 Line Printer. In addition, there are several other changes which, though minor, contribute to the overall accuracy and usability of the publication.

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Text for this publication has been prepared with the IBM SELECTRIC ® Composer.

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# **GLOSSARY OF TERMS**

cursor: An indicator character which is visible on the display screen when the unit is turned on. (It resembles an underscore.) The cursor shows where the next character that is entered from the keyboard will appear on the screen.

data tone: A high-pitched tone that is heard when the computer responds to the telephone. It indicates a connection can be made to the terminal.

designator character: A > or ? character displayed in front of a selector pen field.

detect bars: When the selector pen is being used, detect bars are the lines that appear (on the display screen) through those fields that may be selected.

machine problem: Occurs when a terminal fails to perform the expected function because of a mechanical or electrical failure.

*modem*: A unit of equipment which enables terminals to send and receive data over telephone lines.

programming problem: Occurs when the computer programs are not operating properly, causing unpredictable results at your display terminal or printer.

switched-line 3275: The 3275 communicates with the computer over regular telephone lines. With this equipment, the operator must dial the number of the computer to establish a connection.

terminal: The 3277 and 3275 display stations are referred to as terminals.

typamatic keys: Keys that repeat their function as long as they are held down.

#### INTRODUCTION

Your 3270 Information Display System was designed to operate with maximum reliability. This is important if you are to do the job asked of you. And, most of the time, you will enjoy this reliability. At some time, however, it is possible that something may go wrong — or seem to. It is impossible for any equipment to be completely failure-proof. (The most expensive watch requires occasional servicing and adjustment.) Also, computer programming is a complex field which can introduce an occasional error. And possibly you just may have forgotten to operate some necessary control.

If something should go wrong, this Problem Determination Guide will help you to determine whether you can recover from your problem on your own or whether outside help is needed. When help is needed, the Guide suggests the proper person to contact and the procedure to follow.

In some cases, you will be advised to fill out an Operator Trouble Report. Three forms may be used, depending on the type of keyboard used with your terminal. They may be ordered under the following form numbers:

Typewriter Keyboard – GX27-2952 Data Entry Keyboard – GX27-2953 Operator Console Keyboard – GX27-2954

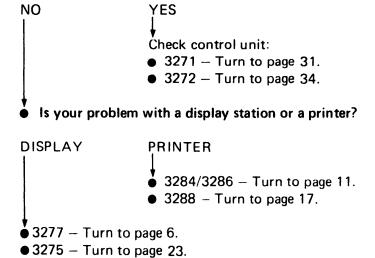
You may merely wish to test your terminal's operation at some time. Your supervisor can tell you if your equipment has the "Request for Test" (RFT) capability. Instructions for running these tests are provided in A Guide to Using the Test Request Feature on IBM 3270 Information Display Systems, Form GA27-2774.

The "Problem Chart" below will direct you to the page that applies to your problem.

# **PROBLEM CHART**

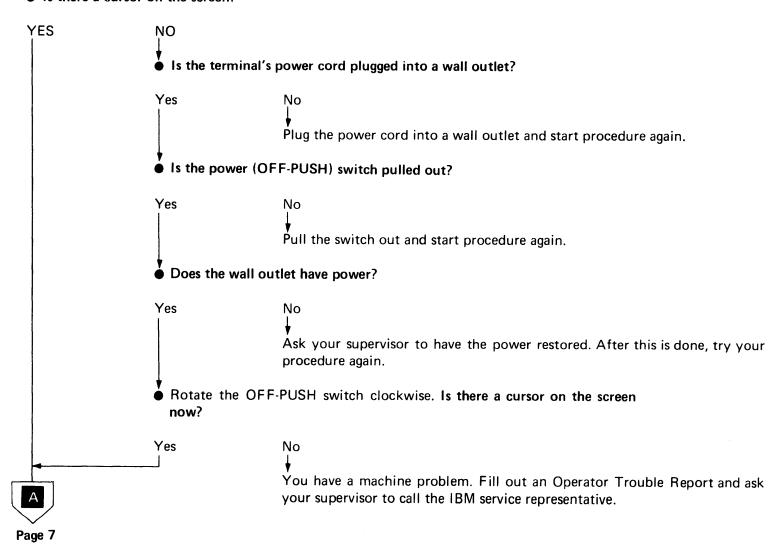
You seem to be having a problem with your equipment.

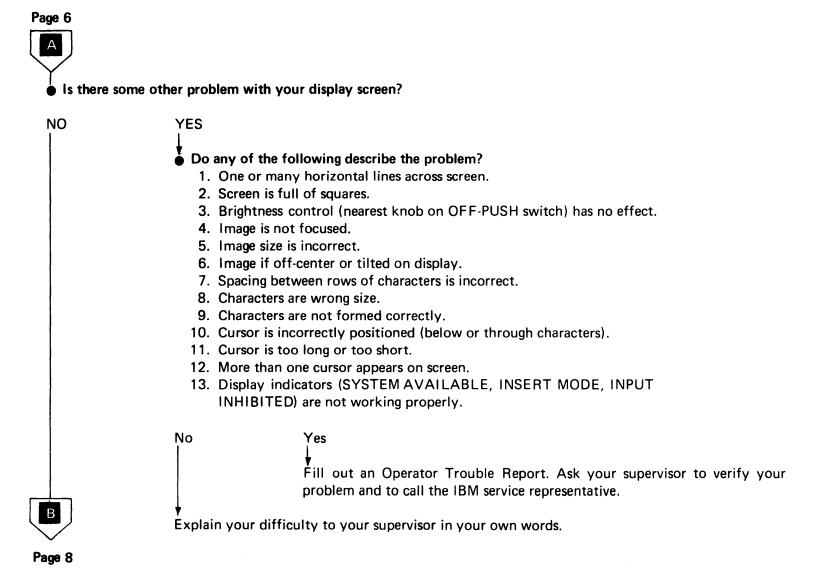
• Is more than one device failing to operate properly?

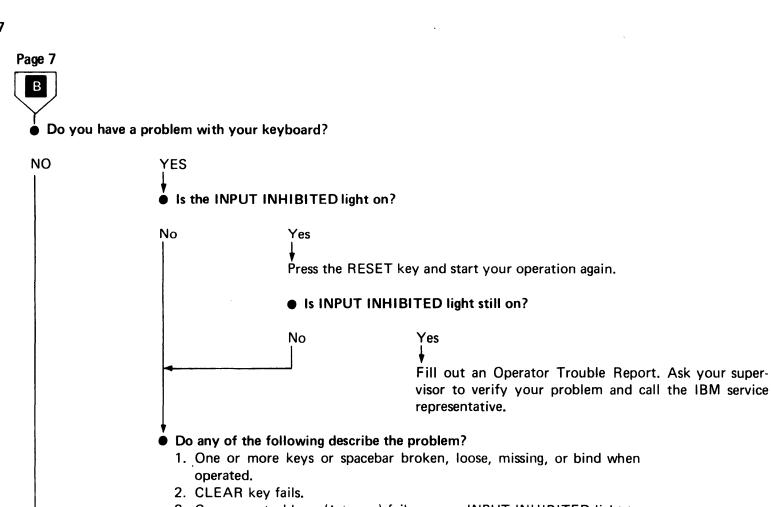


# 3277 DISPLAY STATION

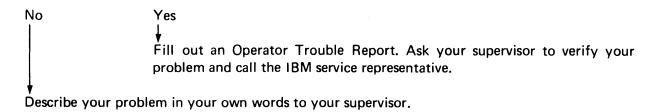
# • Is there a cursor on the screen?

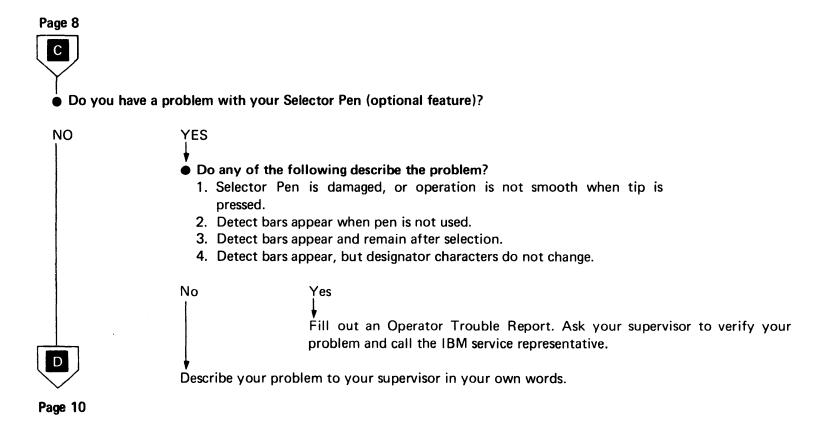






- - 1. One or more keys or spacebar broken, loose, missing, or bind when
  - 3. Cursor control keys (↑ ↓ ← →) fail or cause INPUT INHIBITED light to come on.
  - 4. Typamatic keys do not work.
  - 5. Character keys fail.
  - 6. Program access keys (ENTER, PA1-PA3, TEST REQ, PF keys) fail.

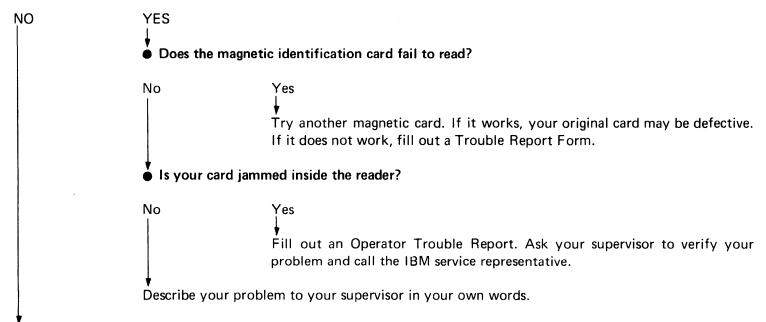








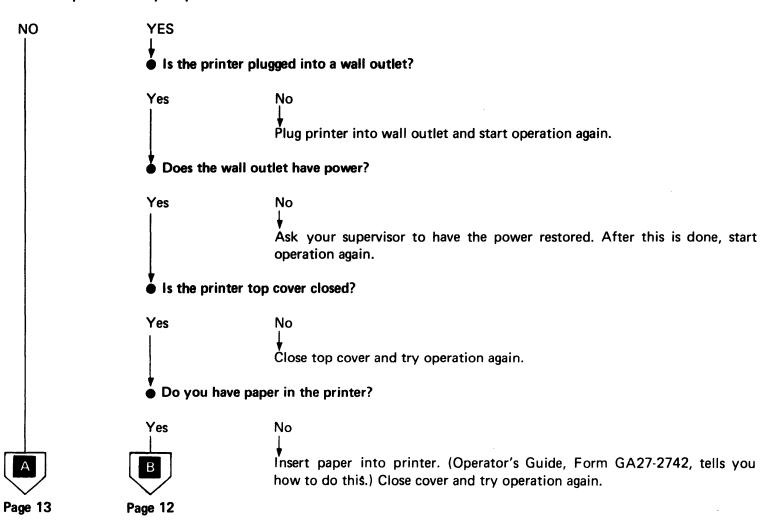
• Do you have a problem with your Identification Badge Reader (optional feature)?

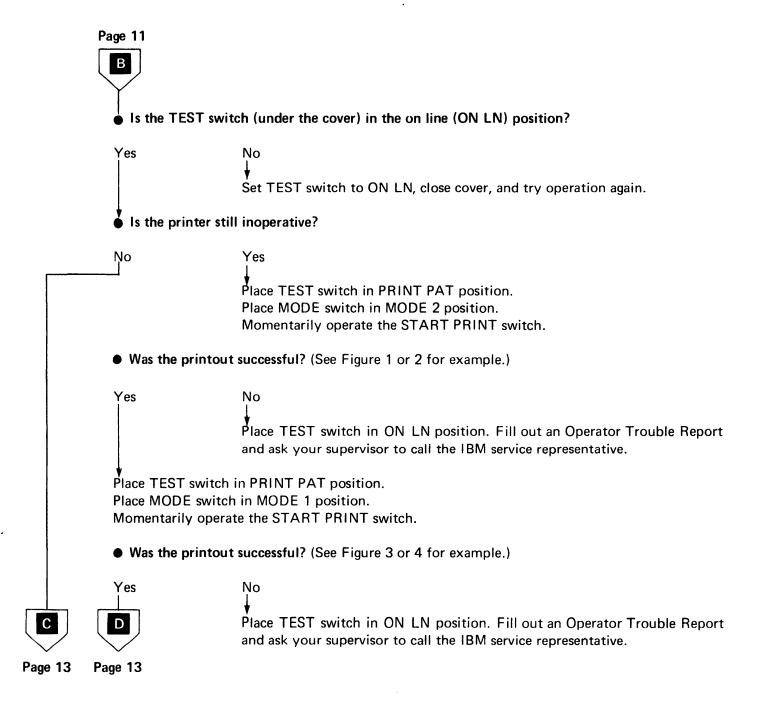


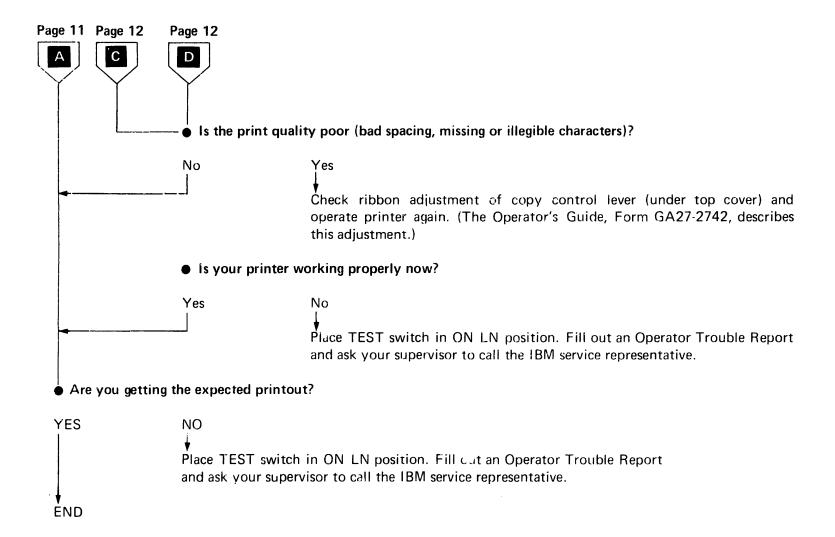
Any 3277 problems not mentioned or resolved at this point should be discussed with your supervisor, who will assist you in filling out an Operator Trouble Report.

# 3284/3286 PRINTER

# • Is the printer totally inoperative?







Note: This figure illustrates the contents of the test pattern rather than the size and style of individual characters.

Figure 1. All-H Test Pattern (Mode 2), 3284/3286 Model 1

Note: This figure illustrates the contents of the test pattern rather than the size and style of individual characters.

Figure 2. All-H Test Pattern (Mode 2), 3284/3286 Model 2

```
BDFH¢ <
                KMOQ! *
                              SUWY %
                                             2 4 6 8 : @
                                                            BDF
XXCXEFXXI¢X<XXLXJKXMXXPQXX$X);XX/SXUXXXYXX,X_>X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
ABCDEFGHI¢.<(+|&JKLMNOPQR!$"); -/STUVWXYZ , $ >?0123456789: #@'=" ABCDEFG ABCDEFG
ABCDEFGHI¢. <(+1&JKLMNOPQR!$"); -/STUVWXYZ , % >?0123456789: #@'=" ABCDEFG ABCDEFG
                KMOQ! *
                             SUWY 18
                                             2 4 6 8 : 0
 BDFH¢ <
                                                            BDF
                                                                    B D F
XXCXEFXXI¢X<XXIXJKXMXXPQXX$X);XX/SXUXXXYXX,X >X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
                                             2 4 6 8 : @
                              SUWY
                                             2 4 6 8 : 0
```

#### Notes:

- A character may or may not appear in the position marked by the arrow. Disregard any character that may appear.
- This figure illustrates the contents of the test pattern rather than the size and style of individual characters.
- 3. The USA EBCDIC character set is used in this illustration. Pattern will vary, depending on character generator feature installed.

Figure 3. Alphameric Test Pattern (Mode 1), 3284/3286 Mcdel 1

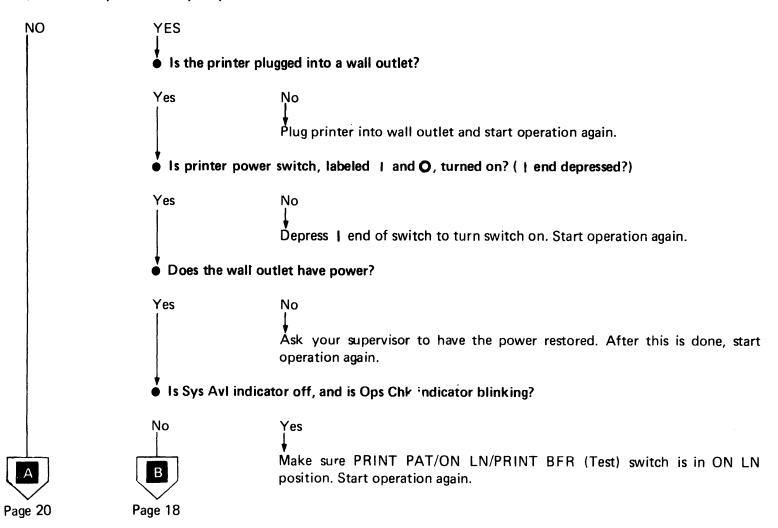
```
BDFH¢ <
                  K M O Q ! *
                                  SUWY
                                                 2 4 6 8 : @
                                                                 BDF
                                                                         BDF
 XXCXEFXXI¢X<XXIXJKXMXXPQXX$X);XX/SXUXXXYXX,X >X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
 ABCDEFGHI¢.<(+1&JKLMNOPQR!$%);¬-/STUVWXYZ ,% >?0123456789:#@'=" ABCDEFG ABCDEFG
 ABCDEFGHI¢.<(+1&JKLMNOPQR!$%);~-/STUVWXYZ ,% >?0123456789:#@'=" ABCDEFG ABCDEFG
                  K M O Q ! "
  BDFH¢ <
                                  SUWY
                                                 2 4 6 8 : @
                                                                 BDF
                                                                         BDF
 XXCXEFXXI¢X<XXIXJKXMXXPQXX$X);XX/SXUXXXYXX,X >X0XX3X56XX9:XQXX" XXCXEFX XXCXEFX
 ABCDEFGHI¢.<(+1&JKLMNOPOR!$%);7-/STUVWXYZ ,% >?0123456789:#@'=" ABCDEFG ABCDEFG
 ABCDEFGHI¢.<(+|&JKLMNOPQR!$");7-/STUVWXYZ ,% >?0123456789:#@'=" ABCDEFG ABCDEFG
                  K M O O ! "
                                  SUWY
                                                 2 4 6 8 : @
                                                                 BDF
                                                                         BDF
  BDFH¢ <
 XXCXEFXXI¢X<XXIXJKXMXXPOXX$X):XX/SXUXXXYXX.X >X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
 ABCDEFGHI¢.<(+1&JKLMNOPQR!$"); -/STUVWXYZ , %_>?0123456789:#@'=" ABCDEFG ABCDEFG
 ABCDEFGHI¢.<(+|&JKLMNOPQR!$");7-/STUVWXYZ ,% >?0123456789:#@'=" ABCDEFG ABCDEFG
                  KMOQ! "
                                                 2 4 6 8 ; 0
                                                                 BDF
  BDFH¢ <
                                  SUWY
                                                                         BDF
 XXCXEFXXI¢X<XXIXJKXMXXPQXX$X);XX/SXUXXXYXX,X >X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
 ABCDEFGHI¢.<(+1&JKLMNOPQR!$");¬-/STUVWXYZ ,% >?0123456789:#@'=" ABCDEFG ABCDEFG
 ABCDEFGHI¢.<(+|&JKLMNOPQR!$"); -/STUVWXYZ , %_>?0123456789:#@'=" ABCDEFG ABCDEFG
                  KMOQ! *
                                  SUWY
                                                 2 4 6 8 : @
                                                                 BDF
                                                                         B D F
  BDFH¢ <
 XXCXEFXXI¢X<XXIXJKXMXXPQXX$X);XX/SXUXXXYXX,X >X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
 ABCDEFGHI¢.<(+|&JKLMNOPQR!$*);¬-/STUVWXYZ ,%_>?0123456789:#@'=" ABCDEFG ABCDEFG
 ABCDEFGHI¢.<(+|&JKLMNOPQR!$#); -/STUVWXYZ , %_>?0123456789:#@'=" ABCDEFG ABCDEFG
                  K M O O ! "
  BDFH¢ <
                                 SUWY
                                                 2 4 6 8 : @
                                                                 BDF
 XXCXEFXXI¢X<XX|XJKXMXXPQXX$X);XX/SXUXXXYXX,X_>X0XX3X56XX9:X@XX" XXCXEFX XXCXEFX
 ABCDEFGHI¢.<(+|&JKLMNOPQR!$%);¬-/STUVWXYZ ,%_>?0123456789:#@'=" ABCDEFG ABCDEFG
 ABCDEFGHI¢.<(+#&JKLMNOPQR!$#);"-/STUVWXYZ ,%_>?0123456789:#@'=" ABCDEFG ABCDEFG
Х
                                  SUWY
                                                 2 4 6 8 : @
                                                 2 4 6 8 : 0
                                  SUWY
                                  SUWY
                                                 2 4 6 8 : @
                                  SUWY
                                                 2 4 6 8 : 0
                                                 2 4 6 8 : @
                                  SUWY
                                                 2 4 6 8 : 0
Notes:
```

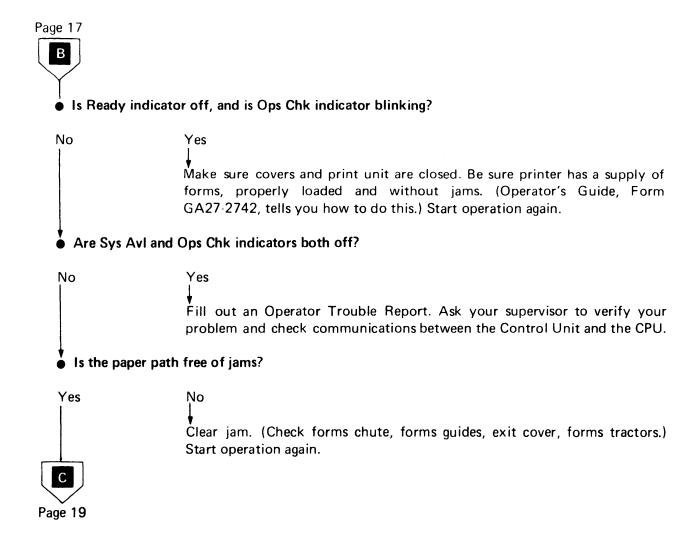
- - 1. A character may or may not appear in the position marked by the arrow. Disregard any character that may appear.
  - 2 This figure illustrates the contents of the test pattern rather than the size and style of
  - 3 The USA EBCDIC character set is used in this illustration. Pattern will vary, depending on character generator feature installed.

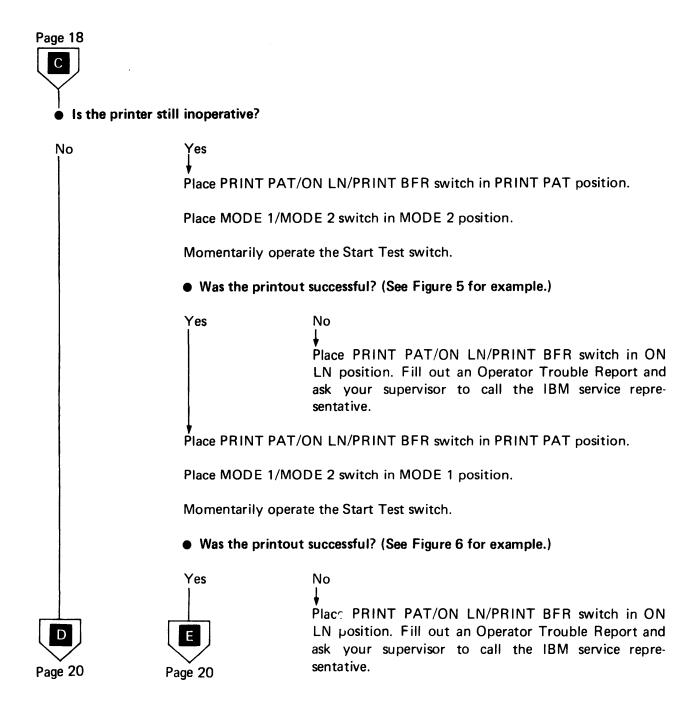
Figure 4. Alphameric Test Pattern (Mode 1), 3284/3286 Model 2

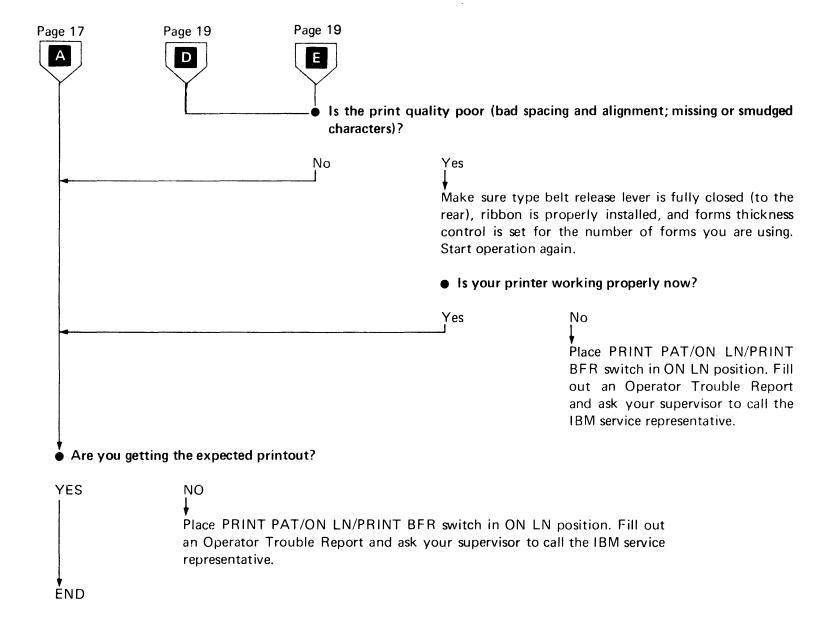
### 3288 LINE PRINTER

# • Is the line printer totally inoperative?









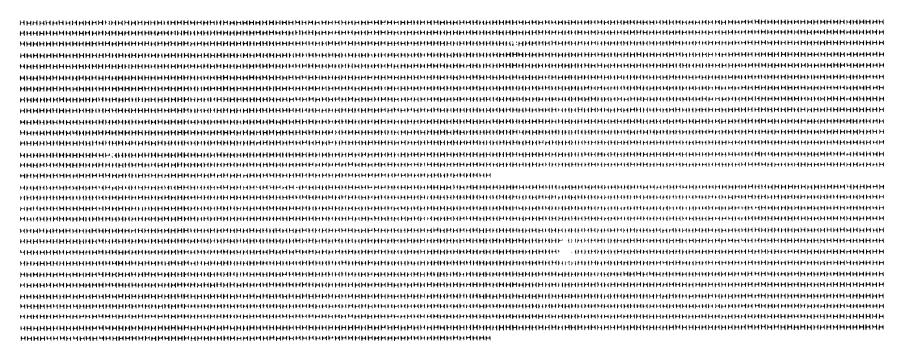


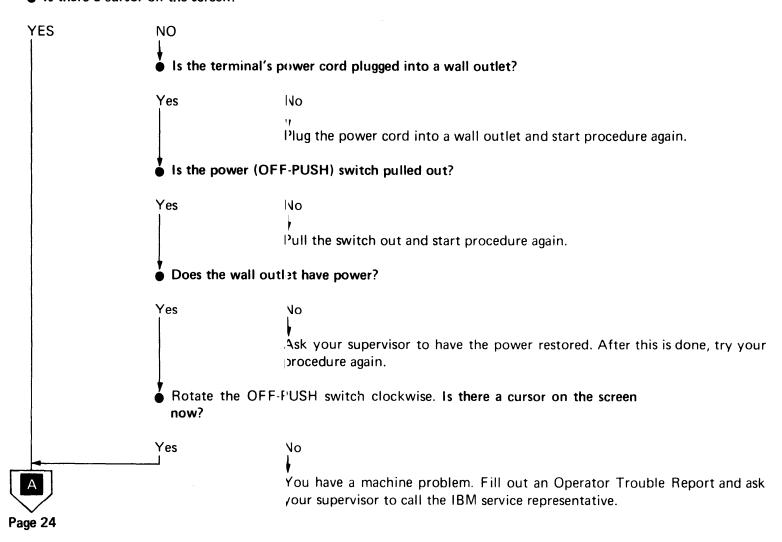
Figure 5. All-H Test Pattern (Mode 2) 3288 Model 2

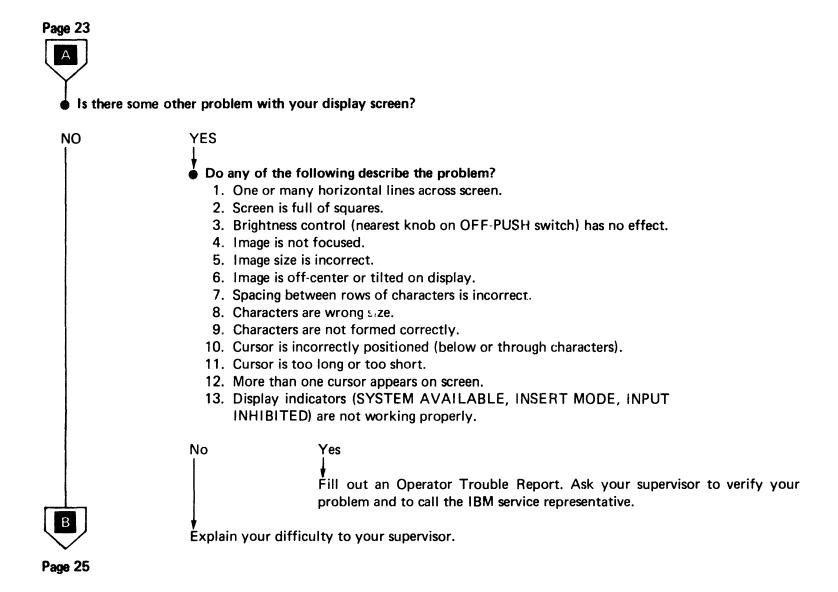
```
BDFHC<
                                    K M O Q ! *
                                                                   SUWY!%
                                                                                                   2 4 6 8 : a
                                                                                                                                    BOF
                                                                                                                                                    8 0 F
  XXCXEFXXI<sup>Z</sup>X<XX|XJKXMXXPQXX$X);XX/SXUXXXYXX•X_>XOXX3X56XX9;XaXX* XXCXEFX XXCXEFX
  ABCDEFGHIV. <(+1&JKLMNOPQR!$*); --/STUVWXYZ; *%_>?0123456789:#@"=" ABCDEFG ABCDEFG
  ABCDEFGHI@.<(+|&JKLMNOPQR!$*); --/STJVWXYZ:+%_>?0123456789:#@"=" ABCDEFG ABCDEFG
    BDFH&<
                                    KMDQ! *
                                                                   SUWY! %
                                                                                                   2468: 3
                                                                                                                                    BOF
                                                                                                                                                    BOF
  XXCXEFXXI@X<XX|XJKXMXXPQXX$X);XX/SXUXXXYXX+X_>XOXX3X56+X9:X@XX" XXCXEFX XXCXEFX
  ABCDEFGHI@.<(+|&JKLMNOPQR!$*); --/STUVWXYZ!, %_>?0123456789: #@" = " ABCDEFG ABCDEFG
  ABCDEFGHIK.<(+\EJKLMNDPQR!$*);~-/STUVWXYZ!,%_>?0123456789:#@*=" ABCDEFG ABCDEFG
    BDFHCC
                                    K M O G ! *
                                                                   SUWY!%
                                                                                                   2 4 6 8 : a
                                                                                                                                    BDF
                                                                                                                                                    BDF
 XXCXEFXXIZX<XX|XJKXMXXPQXX$X);XX/SXUXXXYXX,X_>XOXX3X56XX9:X@XX" XXCXEFX XXCXEFX
  ABCDEFGHI@.<(+|&JKLMNOPQR!$*); --/STUVWXYZ: *%_>?0123456789:#@"=" ABCDEFG ABCDEFG
  ABCDEFGHI@.<(+|EJKLMNOPQR!$*);--/STUVWXYZ!,%_>?0123456789:#@!=" ABCDEFG ABCDEFG
    3 D F H & <
                                    K M O Q ! $
                                                                   SUWY! %
                                                                                                    2 4 6 8 : 2
                                                                                                                                    B D F
  XXCXEFXXIVX<XX|XJKXMXXPQXX$X):XX/SXUXXXYXX,X_>XOXX3X56XX9:X@XX* XXCXEFX XXCXEFX
  ABCDEFGHIE .< (+|EJKLMNOPQR:$*); --/STUVWXYZ; %_>?0123456789:#@"=" ABCDEFG ABCDEFG
  ABCDEFGHIZ.<(+|SJKLMNDPQR!$$);¬-/STUVWXYZ!,% >?0123456789:#@!=" ABCDEFG ABCDEFG
                                   KMOQ! *
    BDFHEC
                                                                   SUWY: %
                                                                                                    2 4 6 8 : a
                                                                                                                                    8 D F
                                                                                                                                                    8 D F
  XXCXEFXXI@X<XX|XJKXMXXPQXX$X]:XX/SXUXXXYXX+X_>XQXX3X56XX9:Xaxx+ xxcxefx xxcxefx
  ABCDEFGHIE.<(+|EJKLMNOPQR!$#);--/STUVWXYZ;*% >?0123456789:#@!=" ABCDEFG ABCDEFG
  ABCDEFGHIZ.ABCDEFG ABCDEFG ABCDEFF ABCDEF
   8 D F H 2 <
                                   K M O O ! *
                                                                   SUWY: %
                                                                                                    2468: a
                                                                                                                                    BDF
                                                                                                                                                    BOF
  XXCXEFXXI@X<XX|XJKXMXXPQXX$X);XX/SXUXXXYXX,X_>XOXX3X56XX9;X@XX# XXCXEFX XXCXEFX
  ABCDEFGHI@.<(+|&JKLMNDPQR!$*); --/STUVWXYZ!, %_>?0123456789:#@"=" ABCDEFG ABCDEFG
 ABCDEFGHI@.<(+|EJKLMNOPGR!$*); --/STUVWXYZ!, %_>?0123456789:#@"=" ABCDEFG ABCDEFG
Х
                                                                    SUWY: 2
                                                                                                    2 4 6 8 : a
                                                                    SUWY: %
                                                                                                    2 4 6 8 : a
                                                                    SUWY : %
                                                                                                    2 4 6 8 : 2
                                                                    SUWY: %
                                                                                                    2 4 6 8 : a
                                                                    SUWY: %
                                                                                                    2 4 6 8 : 3
                                                                    SUWY! %
                                                                                                    2 4 6 8 : a
```

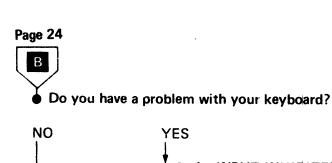
Figure 6. Alphameric Test Pattern (Mode 1) 3288 Model 2

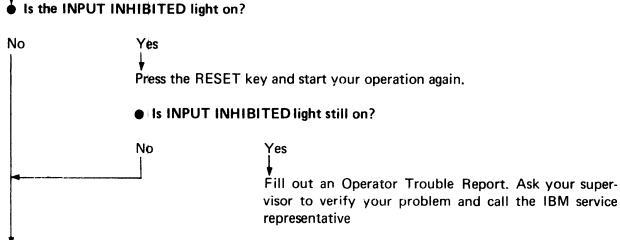
# 3275 DISPLAY STATION

# • Is there a cursor on the screen?

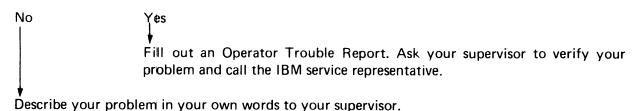






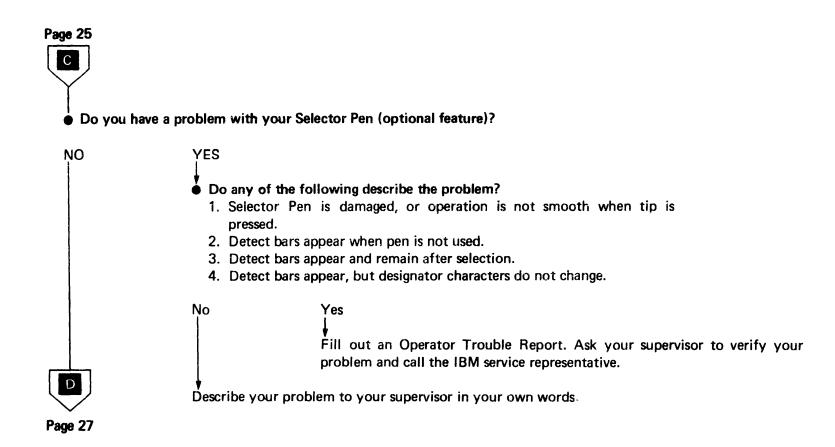


- Do any of the following describe the problem?
  - 1. One or more keys or spacebar broken, loose, missing, or bind when operated.
  - 2. CLEAR key fails.
  - 3. Cursor control keys (↑ ↓ ← →) fail or cause INPUT !NHIBITED light to come on.
  - 4. Typamatic keys do not work.
  - 5. Character keys fail.
  - 6. Program access keys (ENTER, PA1-PA3, TEST REQ, PF keys) fail.





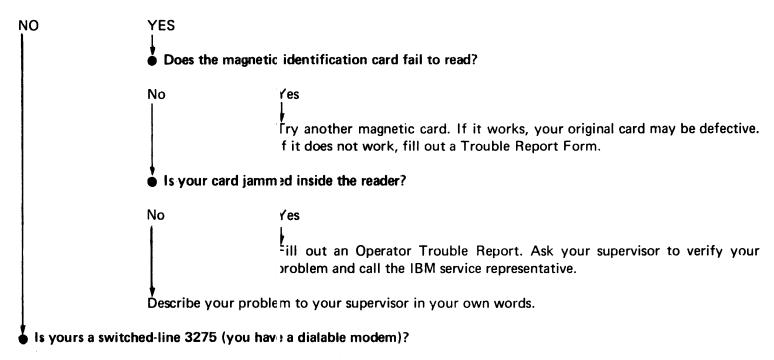
3275

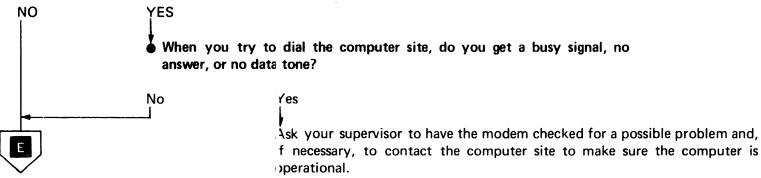




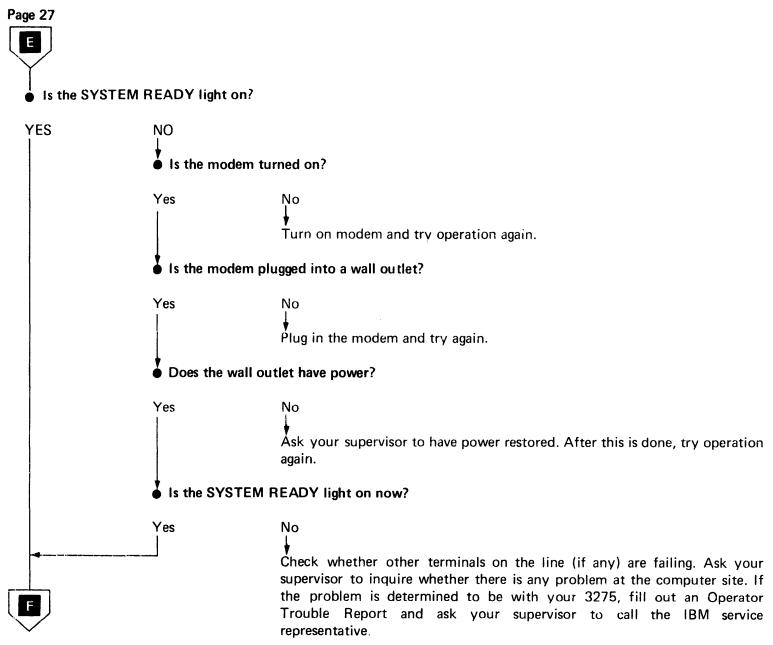


• Do you have a problem with your Identification Badge Reader (optional feature)?

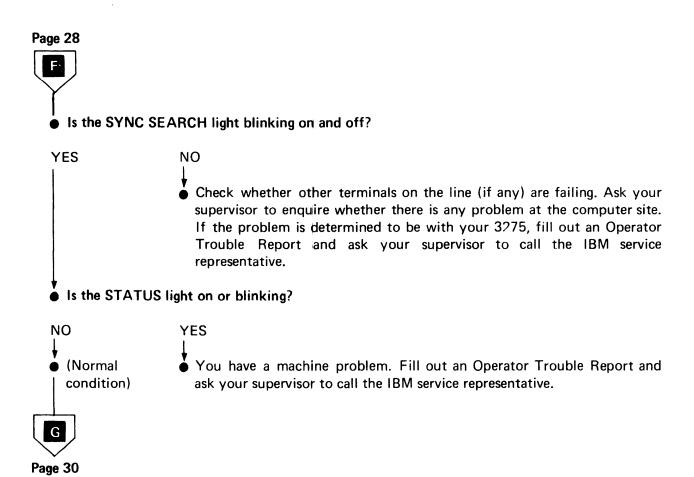


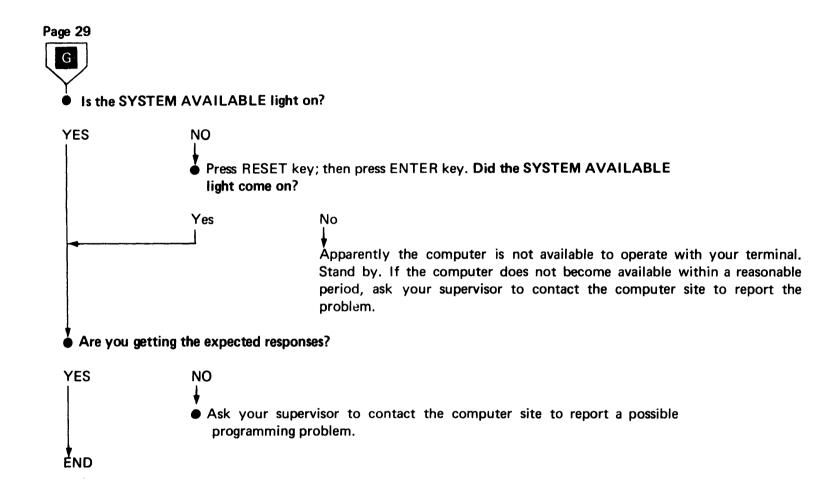


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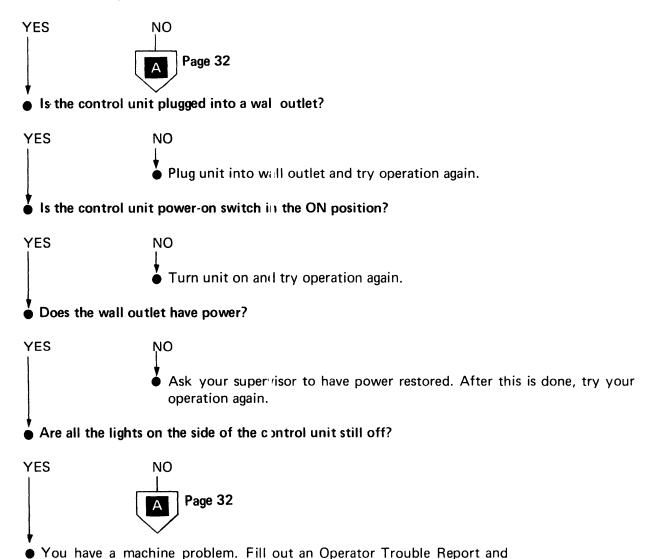




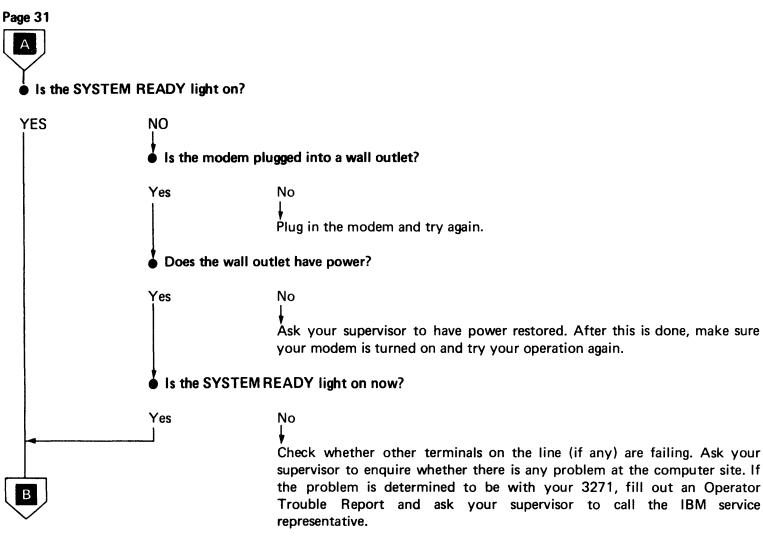
#### 3271 CONTROL UNIT

• Are all the lights on the side of the control unit off?

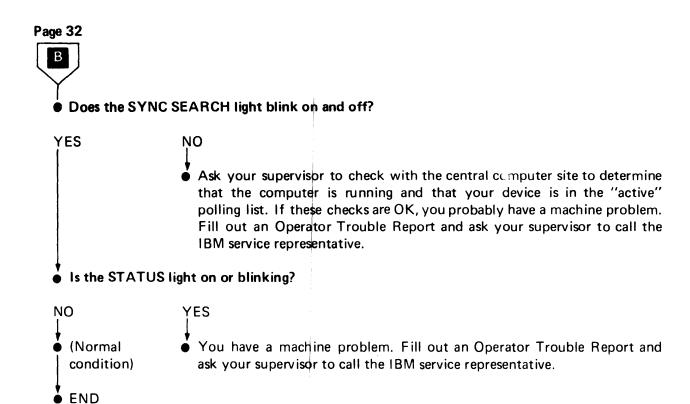
ask your supervisor to call the IBM service representative.



3271



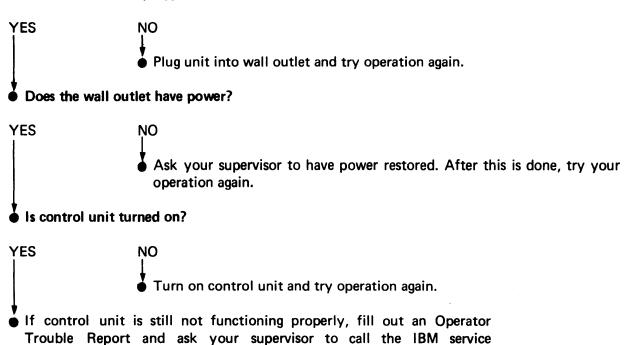
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# 3272 CONTROL UNIT



representative.



3270 Information Display System Problem Determination Guide

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